FIG. 1 (PRIOR ART)

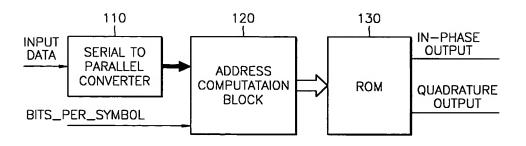


FIG. 2 (PRIOR ART)

1 •	• 0	7 0111	6 • 0110	• 2 0010	• 3 0011
01	00	5 • 0101	4 • 0100	• 0 0000	• 1 0001
		13 • 1101	12 • 1100	. • 8 1000	• 9 1001
3 • 11	• ²	15 • 1111	14 ◆ 1110	◆ 10 1010	•11 1011

MAQ-4 MAD-01 CONSTELLATION DATA 4 5 က က စ ω ADDRESS FIG. 3 (PRIOR ART) က ပ ω ~ ADDRESS COMPUTATAION BLOCK INPUT DATA BITS_PER _SYMBOL

FIG. 4A

1 •	• 0
01	00
3 • 11	• ² 10

FIG. 4B

3 •	• 1
011	001
2 •	• 0
010	000
6 ♦	• 4
110	100
7 ●	• 5
111	101

FIG. 4C

7	6 •	• ² 0010	• 3
0111	0110		0011
5 •	4 •	• 0	• 1
0101	0100	0000	0001
13 •	12 •	• 8	• 9
1101	1100	1000	1001
15 ♦	14 ♦	◆ 10	◆ 11
1111	1110	1010	1011

FIG. 4B

			ı		
	10 •	14 •	• 6	• 2	
	01010	01110	00110	00010	
16 •	13 ●	12 ●	• 4	• 5	• 7
01111	01101	01100	00100	00101	00111
11 •	9 •	8 •	• 0	1	• 3
01011	01001	01000	00000	00001	00011
27 •	25 ●	24 •	● 16	• 17	• 19
11011	11001	11000	10000	10001	10011
31 •	29 ●	28 ●	• 20	21	23
11111	11101	11100	10100	10101	10111
	26 ●	30 ●	• 22	● 18	
	11010	11110	10110	10010	

FIG. 4E

_	•	25 •	24 • • • • • • • • • • • • • • • • • • •	000000	• 9 001001	• 11 001011	● 10 ∞1010
_	_	29 •	28 •	• 12 001100	•	• 15	•
_	_	21 •	•	• 4 000100	• 5		• 6
_		17 •	16 •	000000	• 1 0000001	• 3 000011	<u> </u>
•	51	49 •	48 • .	● 32	_	● 35	
	55	53	52 •		•	• 39	•
_	63	61	_	• 44 101100		• 47	
		57		● 40	• 41 101001	• 43	• 42

FIG. 4F

						ı					
		44 🌑	45	61	60●	●28	29	13	● 12		
		0101100	0101101	0111101	0111100	0011100	0011101	0001103	0001100		
		36	37	53	52	●20	2 1	5	• 4		
		0100100	0100101	0110101	0110100	0010100	0010101	0000101	0000100		
55	54 🌑	50	51 🌑	49	48	●16	1 7	1 9	●18	22	2
0110111	0110110	0110010	0110011	0110001	0110000	0010000	0010001	0010011	0010010	0010110	0010111
63	62	58	59	57 🌑	56	● 24	2 5	• 27	●26	3 0	• 3
0111111	0111110	0111010	0111011	011100;	0111000	0011000	0011001	0011011	0011010	0011110	0011111
47	46	42	43	41	40 🌑	● 8	• 9	11	● 10	14	1.
0101111	0101110	0101010	0101011	0101001	0101000	0001000	0001001	0001011	0001010	0001110	0001111
39 🌑	38	34	35	33	32	• 0	• 1	• 3	2	6	• 7
0100111	0100110	0100010	0100011	0100001	0100000	0000000	1000000	0000011	0000010	0000110	0000111
103 🌑	102	98●	99	97 🌑	96	●64	● 65	● 67	66	• 70	• 7
1100111	1100110	1100010	1100011	1100001	1100000	1000000	1000001	1000011	1000010	1000110	1000111
111	110	106	107 🛑	105	104	●72	7 3	1 75	74	7 8	7:
1101111	1101110	1101010	1101011	1101001	1101000	1001000	1001001	1001011	1001010	1001110	1001111
127	126	122	123	121	120 🌑	●88	● 89	91	9 0	94	• 9
1111111	1111110	1111010	1111011	1111001	1111000	1011000	1011001	1011011	1011010	1011110	1011111
119 🗨	118	114	115	113	112	●80	● 81	● 83	82	● 86	8.
1110111	1110110	1110010	1110011	1110001	1110000	1010000	1010001	1010011	1010010	1010110	1010111
		100	101	117	116	●84	● 85	● 69	68		
		1100100	1100101	1110101	1110100	1010100	1010101	1000101	1000100		
		108	109	125	124	●92	● 93	• 77	● 76		
		1101100	1101101	1111101	1111100	1011100	1011101	1001101	1001100		

FIG. 4G

100 (101 (103 •	102 (98 •	99 • 81108011	97 •	96 •	● 32 m:comm	● 33 omærn	● 35	● 34	● 38 acitacia	● 39	● 37	● 36
108 •	109	111 •	110	106	107 🌑	105 •	104 •	● 40 an:1:000	● 41 million	● 43	● 42	● 46 moterras	● 47	● 45	● 44
124	125	127 •	126	122	123 🌑	121 (120 🌰	● 56 m:1180s	● 57	● 59	● 58	● 62 æ:::::::	● 63	● 61	● 60
116	117 •	119 •	118	114 (115 🌰	113 🌰	112	● 48	● 49	● 51	● 50	● 54	● 55	● 53	● 52
84 •	85 •	87 •	86	82 •	83 •	81 (80 (● 16	● 17 ownpann	● 19	● 18	● 22	● 23 •œ:n:s	● 21	● 20
82 🖷	83 •	95 ●	94 •	90 🌑	91 •	89 •	88 •	● 24	● 25	27	● 26	● 30	• 31	29	● 28
76 •	77 •	79 •	78 •	74	75 • esacieii	73 •	72 •	● 8	9	● 11	● 10	● 14	● 15 excens	● 13	● 12 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
68 •	69	71 • uncousts	70 •	66 •	67 •	65 •	64 •	0 000000	1 (1000000)	3	● 2 F00000018	● 6 cccc1110	• 7 •0000111	5 school (4)	4
196	197 •	199 •	198 (10E11)	194 •	195 •	193 🌰	192 (● 128 18:5383	● 129	● 131	●130 120001111	● 134	● 135 1009011	● 133	●132 18882187
204	205	207													●140
[106]106	11001101	11011111	11001110	202	203	201	200 •	● 136	● 137	● 139	●138 (0001019	142 10001110	143 (00011)	● 141 (CSER14)	18061180
220	221		•	_	_		_			10001011	10001019				10001100
220	221	223	222	218	219	217	216 •	±8011608 ●152	■ 153	■ 155	10M1019	158	159	● 157	156
220	221 •	223 • HOIBIT	222 • 120 HHS	218 HEITERE 210	219 • INCTIONS 211 • INCTIONS	217 • HILDE	216	152 1011800	■ 153 ±8011001 ■ 145	■ 155 IMILE:	154 (0012030 146 (0012030	158 IORLISH	159 1001111 151	157	156
220	221	223 • 11011111 215 • 11011111 247 •	222 • 128 HHS 214 • 1716 HE 246 •	218 DELINE 210 DELINE 210 DELINE 210 DELINE 242 DELINE	219 • INCTIONS 211 • INCTIONS 211 • INCTIONS 243 •	217	216	152 18011808 144 1801088 176	153 1811901 145 181001 177	155 155 1601101 147 179 1011011	154 10012019 146 10012019 178	158 (DELITIE 150 (159 100:1111 159 100:1111 151 150:1811 183	157 16001181 149 181	156 1001100 148 1001100
220	221	223	222	218 HELINE 210 HELINE 210 HELINE 242 HELINE 250	219	217	216	152 1901 1909 1152 1901 1900 1900 1900 1900 1900 1900 184	153 14511601 145 145 145 145 145 181166	155 155 1001101	10041019 154 10811018 146 10910018 178 10910018	158 1081118 158 10811118 150 150 1081818 182 1081818 190	10001111	157 10213181 149 1013191 181 181	156 156 161100 148 148 180 1811100

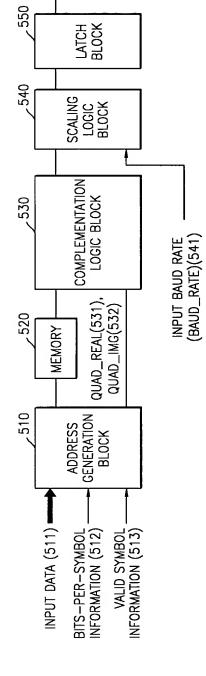


FIG. 5

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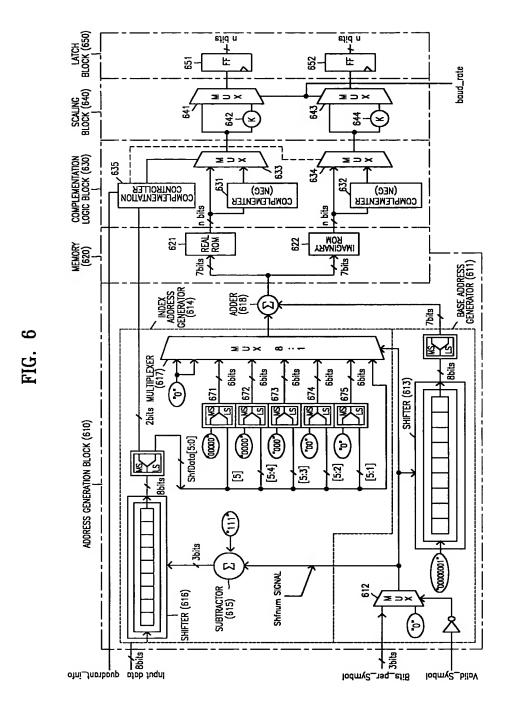


FIG. 7

Bits-per-Symbol	VALID INPUT DATA BITS 7th -> 0th bit (X: not valid)
"000"	"XXXXXXXX"
"001"	"XXXXXXXOO"
"010"	"XXXXXXOOO"
"011"	"XXXX0000"
"100"	"XXX00000"
"101"	"XX000000"
"110"	"X0000000"
"111"	"00000000"

FIG. 8

address	ROM Data
0	zero symbol
1	qpsk r(0)
2	8-psk r(0)
3	8-psk r(1)
4	16-qam r(0)
5	16-qam r(1)
6	16-qam r(2)
7	16-qam r(3)
65	256-qam r(0)
66	256-qam r(1)
67	256-qam r(2)
127	256-qam r(63)

address	ROM Data
0	zero symbol
1	gpsk I(0)
2	8-psk I(0)
3	. 8-psk l(1)
4	16-qam I(0)
5	16-qam I(1)
6	16-qam I(2)
7	16-qam I(3)
65	256-qam 1(0)
66	256-qam I(1)
67	256-qam I(2)
127	256-qam 1(63)

FIG. 9

Bits-per-Symbol	VALID INPUT DATA BITS 7th -> 0th bit (X: not valid)	Shfnum	INPUT DATA SHIFTED BY AS MUCH AS 7—Shfnum (X: not valid)
"000"	"XXXXXXXX"	0	"00000000"
"001"	"XXXXXXQQ"	1	"QQ000000"
"010"	"XXXXXQQB"	2	"QQB00000"
"011"	"XXXXQQBB"	3	"QQBB0000"
"100"	"XXXQQBBB"	4	"QQBBB000"
"101"	"XXQQBBBB"	5	"QQBBBB00"
"110"	"XQQBBBBB"	6	"QQBBBBB0"
"111"	"QQBBBBBB"	7	"QQBBBBBB"

FIG. 10A

S1=qi1, S0=qr0

QUARDANT	qi1	qr0	S1	S0
1	0	0	+	+
II	0	1	_	+
III	1	1	_	_
IV	1	0	+	

FIG. 10B

S1=qi1, S0=qr0'

QUARDANT	qi1	qr0	S1	S0
ı	0	0	+	-
11	0	1	+	+
III	1	1	_	+
IV	1	0	_	_

FIG. 10C

QUARDANT	qi1	qr0	S1	S0
I	0	0	1	1
II	0	1	-	+
Ш	1	1	+	+
IV	1	0	+	_

FIG. 10D

QUARDANT	qi1	qr0	S1	S0
I	0	0	ı	+
- 11	0	1	-	-
III	1	1	+	-
IV	1	0	+	+

FIG. 11

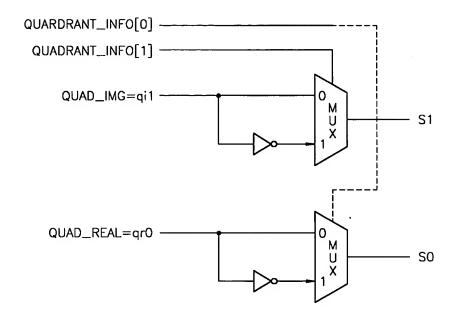


FIG. 12

